UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

STATEMENT OF BASIS FOR ISSUANCE OF UNDERGROUND INJECTION CONTROL (UIC) PERMIT

Permit Number: MI-079-2D-C008

Facility Name: Simpson #1-9

Kalkaska Oilfield Services of Kalkaska, Michigan, has applied for a United States Environmental Protection Agency (USEPA) permit for the existing Simpson #1-9 injection well to be used for commercial disposal of salt water in the Kalkaska 9 oil field, Kalkaska County, Michigan. Review of the permit application indicates that no significant environmental impact should result from the injection operation. The USEPA, therefore, intends to issue a permit to continue operation of this well. Under the authority of Title 40 of the Code of Federal Regulations (40 CFR), Parts 144 and 146, USEPA permits must specify conditions for construction, operation, monitoring, reporting, and plugging and abandonment of injection wells so as to prevent the movement of fluids into any Underground Source of Drinking Water (USDW). General provisions for USEPA UIC permit requirements are found at 40 CFR Parts 144 and 146, while regulations specific to Michigan injection operations are found at 40 CFR Part 147 Subpart X. In accordance with 40 CFR 124.7, general information and highlighted permit conditions specific to this well are as follows:

Area of Review (AOR) and Corrective Action: In accordance with 40 CFR 144.55. 146.6 and 146.7, this is the area surrounding the well within which the applicant must research, examine and develop a program to address, with a corrective action plan, wells which penetrate the injection zone that are improperly sealed, completed or abandoned and may therefore provide a conduit for fluid migration. The applicant has provided documentation on the well population within 1/4 mile of the injection well (i.e., the AOR). There are no producing, no injection, no temporarily abandoned, and no plugged abandoned wells within the 1/4 miles radius AOR which penetrate the injection zone.

Underground Sources of Drinking Water (USDWs): USDWs are defined by the UIC regulations as aquifers or portions thereof which contain less than 10,000 milligrams per liter of total dissolved solids and which are being or could be used as a source of drinking water. The base of the lowermost possible USDW in the vicinity of the injection well has been identified at approximately 472 feet below ground surface. This water-bearing formation is the Glacial Drift.

Injection and Confining Zone: Injection of fluids for commercial salt water disposal is limited by the permit to the Traverse Limestone, Bell Shale and

Dundee Limestone in the interval between 1452 and 3125 feet below ground surface. This injection zone is separated from the lowermost USDW by approximately 980 feet of sedimentary rock strata.

Construction Requirements: The construction of the injection well meets the regulatory criteria of 40 CFR 146.22. This requires that all wells which inject fluids which are brought to the surface in connection with oil or natural gas production, or for enhanced recovery of oil or natural gas, be sited so that they inject into a formation which is separated from any USDW by a confining zone free of known open faults or fractures within the AOR. All Class II wells must also be cased and cemented to prevent the movement of fluids into or between USDWs.

Injection Fluid: The injected fluid is limited by the permit to produced brine from approved sources listed in Attachment H of the permit file and Attachment D of the permit. The permittee has provided a chemical analysis of each of the sources of oil field brine that are presently being disposed of into the injection well. The permittee may accept brines from sources other than those listed in Attachment H of the permit file provided that, prior to accepting any new source of brine for disposal into the injection well, a chemical analysis is submitted to and approved by the USEPA and the permit is modified to reflect this approval. The expected maximum daily volume of fluid to be injected is 500 barrels.

Maximum Injection Pressure: The maximum wellhead injection pressure shall be limited to 298 pounds per square inch gauge (psig). This limitation will ensure that the pressure during injection does not initiate fractures in the confining zone adjacent to the lowermost USDW during injection operations. This in turn ensures that the injection pressure will not cause the movement of injection or formation fluids into a USDW as prohibited by 40 CFR 146.23(a)(1).

Monitoring and Reporting Requirements: In accordance with 40 CFR 144.54 and 146.23, the applicant will be responsible for observing and recording injection pressure, flow rate, annulus pressure, and cumulative volume on a weekly basis and reporting this to the USEPA on a monthly basis. The applicant will also be responsible for observing, recording and reporting annulus liquid loss on a quarterly basis. In addition, to satisfy the absence of significant leaks in the tubing, packer or casing requirements set forth at 40 CFR 146.8(b), a standard annulus pressure test (SAPT) was conducted on February 14, 1996, for the Simpson #1-9 well. This pressure test was witnessed by a representative of the USEPA and the well was found to have mechanical integrity as defined at 40 CFR 146.8(a)(1). The applicant is required to repeat the the SAPT, at least once every five(5) years thereafter. To satisfy the requirements set forth at 40 CFR 146.8(c), to determine the absence of fluid movement behind the casing, the USEPA reviewed all available information such as cement bond logs, cement tickets, temperature, noise or oxygen activation logs for this well. The USEPA has concluded that the well has mechanical integrity as defined at 40 CFR 146.8(a)(2). If a temperature, noise or oxygen activation log was used to determine this part of the MIT (i.e., the absence of fluid movement), then

the applicant will be required to repeat this test at least once every five (5) years thereafter. These tests will provide USEPA with an evaluation of the integrity of the tubular goods (casing, tubing and packer) as well as documentation as to the absence or presence of fluid movement behind the casing.

Plugging and Abandonment: In accordance with 40 CFR 146.10 and 146.24(d), the permit includes a plugging and abandonment plan for an environmentally protective well closure at the time of cessation of operations. Kalkaska Oilfield Services has demonstrated adequate financial responsibility to close, plug, and abandon this underground injection operation. A State Bond in the amount of $250,000.00 has been established for this purpose with United Pacific Insurance Company.

Issuance and Effective Date of Permit: In accordance with 40 CFR 124.15, the permit will become effective immediately upon issuance if no public comments are received that request a change in the draft permit. However, in the event that public comments are received and request a change in the draft permit then the permit will become effective thirty (30) days after the date of issuance unless the permit is appealed within that time. In accordance with 40 CFR 144.36(a), the permit will be in effect for the life of the well, unless it is otherwise modified, revoked and reissued, or terminated as provided at 40 CFR 144.39, 144.40 and 144.41.

Questions, comments and requests for additional information or for a public hearing may be submitted in writing to the contact person listed below or made verbally to Stephen Roy at (312) 886-6556. The public comment period on this permitting action will close thirty (30) days after the date of the public notice. If the USEPA receives written comments of substantial public interest that warrants a hearing on this action, a public notice of a scheduled hearing will be published locally and mailed to interested parties.

To preserve your right to appeal any final permit decision that may be made in this matter under 40 CFR Part 124, you must either participate in the public hearing or send in written comments on the draft permit decision. The first appeal must be made to the Environmental Appeals Board; only after all agency review procedures have been exhausted may you file an action in the appropriate Circuit Court of Appeals for review.

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Attn: Lisa Perenchio, Chief
Direct Implementation Section

for Lisa Perenchio, Chief
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